Claims

1. A method for synthesizing peptides comprising:

a) treating a peptide or amino acid derivative, which has an α-amine function blocked with a urethane group of the formula

R^1-SO_2-CH_2CH_2-O-CO-,

wherein R^1 is aryl,

with an excess of an aliphatic secondary amine in an organic solvent to provide the release of the free α-amine function of said amino acid or peptide derivative and the formation of a tertiary amine adduct between said secondary amine and the liberated vinyl compound of the formula

R^1-SO_2-CH_2=CH_2;

b) removing the solvent and the excess of said secondary amine;

c) contacting thus formed mixture of the N_α-deprotected amino acid or peptide derivative and said tertiary amine adduct with subsequent peptide or amino acid derivative N_α-protected with the above indicated or another urethane group under conditions providing the formation of a peptide bond between the free α-amine function of the N_α-deprotected amino acid or peptide derivative and an α-carboxylic function of the subsequent N_α-protected peptide or amino acid derivative;

d) separating the newly formed peptide from the reaction mixture;

e) repeating procedures as set forth above until the desired polypeptide is obtained.

2. The method of claim 1 wherein R^1 is selected from the group consisting of 4-nitrophenyl, 4-phenylsulfonylphenyl, 4-methylsulfonylphenyl, 4-dimethylamidosulfonyl-phenyl, 4-diethylamidosulfonylphenyl, 4-morpholidosulfonylphenyl and 4-piperidido-sulfonylphenyl.

3. The method of claim 1 wherein the aliphatic secondary amine is selected from the group consisting of dimethylamine, diethylamine, di-n-propylamine, piperidine, pyrrolidine and morpholine.

4. The method of claim 1 wherein the organic solvent is a volatile aprotic solvent.

5. The method of claim 4 wherein the volatile aprotic solvent is selected from the group consisting of dichloromethane, acetonitrile, tetrahydrofuran, dioxane, N,N-dimethylformamide, N,N-dimethylacetamide, N-methylpyrrolidone and dimethylsulfoxide.

6. The method according to claims 3 or 4 wherein removing the solvent and the excess of the aliphatic secondary amine is performed by evaporation.

7. The method of claim 1 wherein said contacting step is performed in the presence of a coupling reagent.

8. The method of claim 7 wherein said coupling reagent is selected from the group consisting of dicyclohexylcarbodiimide, diisopropylcarbodiimide, benzotriazolyl-1-oxy(tris-dimethylamino)phosphonium hexafluorophosphate (BOP) and uronium type coupling reagents.